



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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In re application of

Lester F. LUDWIG, et al.

Appln. No.: 09/072,549

Confirmation No.: 6658

Filed: May 05, 1998

Group Art Unit: 2153

Examiner: D. Dinh

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For: MULTIPLEXING VIDEO AND CONTROL SIGNALS ONTO UTP


SUBMISSION OF APPELLANT'S BRIEF ON APPEAL

Commissioner for Patents
Washington, D.C. 20231

Sir:

Submitted herewith please find an original and two copies of Appellant's Brief on Appeal. A check for the statutory fee of \$160.00 (small entity) is attached. Authorization is also given to charge or credit any difference or overpayment to Deposit Account No. 19-4880. A duplicate copy of this paper is attached.

Respectfully submitted,


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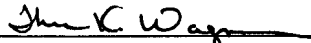
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APPELLANT'S BRIEF ON APPEAL UNDER 37 C.F.R. § 1.192

Commissioner for Patents
Washington, D.C. 20231

Sir:

In accordance with the provisions of 37 C.F.R. § 1.192, Appellant submits the following:

I. REAL PARTY IN INTEREST

The real party in interest is Collaboration Properties, Inc., the assignee of the present application.

II. RELATED APPEALS AND INTERFERENCES

To Appellant's knowledge, there are no other appeals or interferences involving the present application.

III. STATUS OF CLAIMS

Claims 1-5, 7-15, 17-25 and 27-31 are all the claims pending in the application. Claims 1, 12-14, and 21 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Verhoeckx. Claims 1-5, 12-15, and 21-25 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Tompkins,

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

and further in view of Verhoeckx. Claims 7, 17, and 27 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Tompkins and Verhoeckx and further in view of Ramanathan. Claims 8, 18, and 28 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Tompkins, Verhoeckx, and Ramanathan, and further in view of Rangan. Claims 9-11, 19-20, and 29-31 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Tompkins, Verhoeckx, and Ramanathan, and further in view of Stefik. All of the pending claims also stand rejected under 35 U.S.C. § 112, first paragraph, for non-enablement.

IV. STATUS OF AMENDMENTS

Appellant has not amended the claims pursuant to final rejection.

V. SUMMARY OF THE INVENTION

The present invention is directed to a video communication system, and to a method of conducting a teleconference, involving the transmission of high-quality color video images, , meeting NTSC standards, over unshielded twisted pair (UTP) lines which are part of a computer network. The system and method involve the provision of a plurality of digital display devices.

Previously, in order to provide high-quality color video, it was necessary to use other media, such as coaxial cable, to transmit the color video signals. Prior patents such as Tompkins are examples of this kind of approach. Where the transmission of video over UTP was desired in certain contexts, the medium was bandwidth-limited, thus preventing transmission of high-quality video over UTP. Prior patents such as Verhoeckx are examples of this kind of limitation.

Fig. 1 of the present application shows workstations, such as collaborative multimedia workstations (CMW) 12.1 – 12.10, each having a display, and connected to a multimedia LAN

(MLAN) 10 by wiring 13 comprising wires 13a, 13b which are UTP wires. See, e.g., specification p. 8, first full paragraph; p. 9, third full paragraph; p. 10, first and second full paragraphs.

As shown in Fig. 3, lines 13a also are coupled to a data LAN hub 25, which is an example of a communications control component, to facilitate data communication (including communication of control signals) among CMWs 12. See, e.g., specification, p. 11, first full paragraph.

VI. ISSUES

1. Does the Verhoeckx reference, taken alone or with the other applied prior art, teach or suggest the video communications system of claims 1 and 21 and their dependencies?
2. Does the combination of Verhoeckx and Tompkins, taken alone or with the other applied prior art, teach or suggest the video communications system of claims 1 and 21 and their dependencies?
3. Does the Verhoeckx reference, taken alone or with the other applied prior art, teach or suggest the method of conducting a teleconference as claimed in claim 12 and its dependencies?
4. Does the combination of Verhoeckx and Tompkins, taken alone or with the other applied prior art, teach or suggest the method of conducting a teleconference as claimed in claim 12 and its dependencies?
5. Does the Verhoeckx reference enable the use of UTP for the transmission of video signals at TV quality, to the same extent as does the present application?

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

6. Does the public availability of the NVT-518 transceiver, prior to the time of filing of the present application, show a level of ordinary skill sufficient to render the present application enabling as to the claimed features?

VII. GROUPING OF CLAIMS

Claims 1-5, 7-11, 21-25, and 27-31 stand and fall together. Claims 12-15 and 17-20 stand and fall together.

VIII. ARGUMENT

Issue 1

In the Office Action, the Examiner maintains that Verhoeckx teaches equivalent technology, to the extent that what Appellant is claiming is described in the present application. Alternatively, the Examiner asserts that the present application is not enabling. Appellant respectfully submits that the Examiner's focus is somewhat misplaced, as is hoped will be clear from the following discussion.

To begin, the table below compares Verhoeckx with the present invention.

Scope	Topic	Verhoeckx	Invention
High Level	Analog video over UTP	Low quality only; signal must be <1MHz bandwidth	High-Quality only; full NTSC bandwidth (4.5MHz)
	Video Phone System	"..relates to..."	Focus of invention
Detail	A video source	Yes	Yes
	A plurality of displays	<u>No</u>	Yes
	Analog video signals from video source	Yes	Yes

APPELLANT'S BRIEF ON APPEAL
 UNDER 37 C.F.R. § 1.192
 U.S. Appln. No. 09/072,549

Scope	Topic	Verhoeckx	Invention
	Digital control signals from a communications control component	<u>No</u> ; <u>sync signals</u> are reorganized and reinserted into an original sync timeslot in video signal. The Verhoeckx sync signals do not control communications, nor do they originate from any communications control component such as described in the present application. Verhoeckx describes no such communications control component.	Yes; extensive detail of communications control component given in specification.
	Multiplexing of analog video signal with digital control signals from a communications control component	<u>No</u> ; instead, <u>sync signals</u> , which are <u>not</u> communications control signals, are reorganized and reinserted into the original sync timeslot in the video signal	Yes
	Transmission of multiplexed signal over UTP	Yes, but the overall signal must have a bandwidth of <1MHz, thereby preventing transmission of TV-quality video	Yes, but provides for TV-quality video signal transmission; specification discusses NTSC video signals (4.5MHz)
	Teaching of UTP transceivers	UTP transceivers of the day (circa 1971) assumed	UTP transceivers of the day (circa 1993) assumed

From the foregoing table and an examination of the rejected claims in the context of the specification, one aspect that should be appreciated is that the invention of claims 1 and 21 (and their dependencies) is directed to a video communications system which includes all of the various key components necessary for the operation of such a system. The specification provides focus for each of these various key components, and the specification overall combines all of those key components. In contrast, Verhoeckx deals with limited aspects of such systems.

Verhoeckx is directed to reorganizing the transmission and restoration of video sync signals so that, with a video scan signal having a bandwidth less than 1MHz, the overall reorganized signal will occupy less than 1 MHz of bandwidth. Verhoeckx does not teach or even remotely suggest any communications control components, nor is Verhoeckx directed to an

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

overall video teleconferencing system. Verhoeckx does not teach or suggest TV quality video signal transmission over UTP – indeed, Verhoeckx could not do this, because the actual signal transmitters and receivers of the day (~1971) did not have that capability.

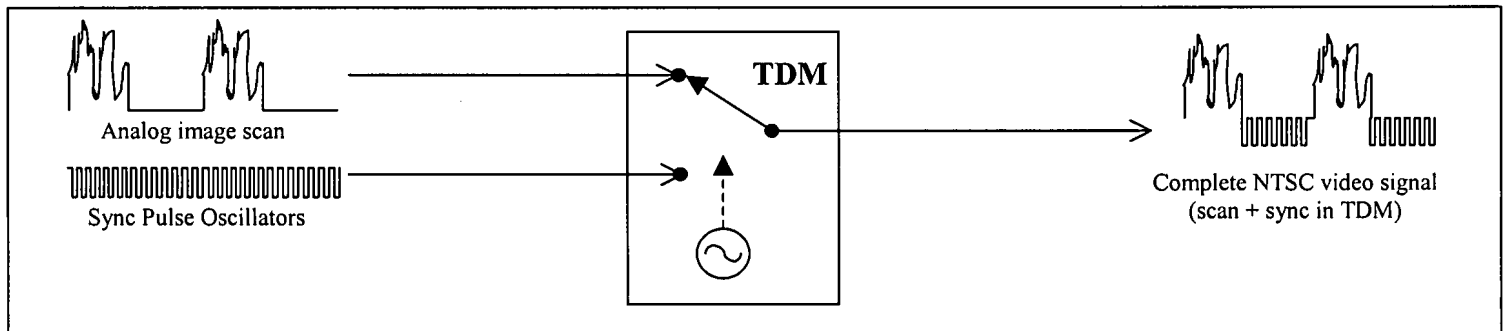
In contrast, the present invention as recited in claims 1 and 21 and their dependencies is directed to the creation of a video teleconferencing system which provides for TV-quality color video signal transmission over a common UTP path for both analog video signals, and digital control signals provided by a communications control component. The analog video signals and the digital control signals are multiplexed. In this regard, Appellant respectfully disagrees with the Examiner's refusal to accord any weight to the recitation of the term "computer network" in claims 1 and 21 (and hence in their dependencies). The Examiner is not entitled to read terms out of claims, particularly where, as here, giving no weight to the term "computer network" takes the invention of claims 1 and 21 out of its proper context, which is a multimedia LAN which may or may not be interconnected with other multimedia LANs. This point is amplified where the Examiner, in construing the term "communications control component," has not heeded the specification, which provides a LAN hub as an example of such a component.

Thus, while the Examiner has focused on the "high quality color video signals over UTP" aspect of the invention in comparing it to Verhoeckx, in reality when the overall claims are considered, there are aspects which clearly are missing from Verhoeckx, irrespective of the outcome of the Verhoeckx "UTP" issue.

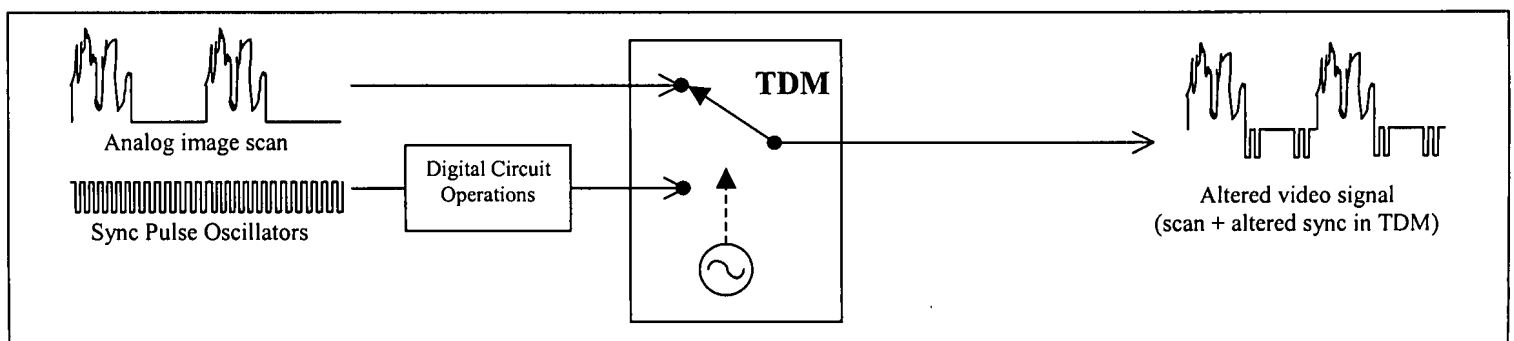
Looking at this last point now in more detail, in contrast to the teachings of Verhoeckx, the invention provides full NTSC bandwidth over UTP (at least 4.5MHz). Looking more closely

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

at this last point, the NTSC signal format which the present application describes inherently includes a Time-Division Multiplex arrangement which cycles among analog scan information and digital scanning oscillator synchronization pulses, as seen from the following diagram.

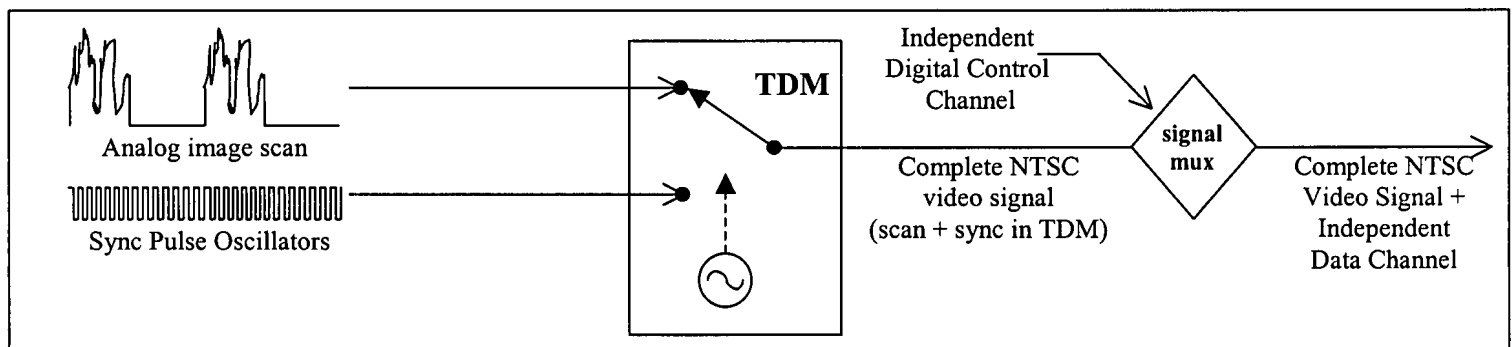


Verhoeckx teaches reducing sync signal bandwidth by introducing digital circuit operations on the scanning oscillator sync pulses. With this approach, Verhoeckx is able to achieve the result that, with a video scan signal bandwidth $< 1\text{MHz}$, the overall reorganized signal will occupy $< 1\text{MHz}$. Thus, the Verhoeckx digital operations simply reorganize the synchronization signals themselves, but no more. The Verhoeckx digital operations in no way involve the introduction of digital control signals from any sort of communications control component. Moreover, Verhoeckx absolutely lacks any such communications control component. There is no computer networking aspect to Verhoeckx whatsoever.



APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

In contrast, among other things, the claims of the present application recite multiplexing of a digital control signal from a communications control component with an analog NTSC video signal. As discussed above, the communications control components are explicitly taught in the present application, and are clearly distinguishable, as a source of the digital control signal, from the teachings of Verhoeckx.



From the foregoing, it is believed clear that the argument that the Examiner is trying to make with respect to Verhoeckx must fail, as the asserted Verhoeckx modified synchronization signals within the video signal are in no way equivalent to the digital control signals from communications control components of the claimed invention recited in claims 1 and 21 and their dependencies. Therefore, Appellant submits that these claims are patentable over Verhoeckx.

None of the other applied references supplies the deficiencies of Verhoeckx. Appellant will discuss Tompkins more specifically below, but in any event, with respect to the remaining

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

applied references, Appellant submits that those references do not supply the deficiencies of Verhoeckx, and so the claims are patentable.

Issue 2

Tompkins teaches transmitting signals at around 70MHz and 170MHz over coaxial cable, because coaxial cable provides sufficient bandwidth for such signals. Tompkins in no way supplies any of the deficiencies of Verhoeckx in that Tompkins lacks any teaching or suggestion of the computer network context, or the communications control component, as recited in claims 1 and 21 and their dependencies. Tompkins also lacks teaching or suggestion of transmitting TV-quality color video signals over UTP., but instead emphasizes transmitting such signals over coaxial cable. From Appellant's extensive discussion relative to Issue 1, it should be appreciated that Verhoeckx specifically says that bandwidth over UTP is limited to 1 MHz or less (col. 4, lines 35-40). Transmission at 1 MHz or less, when NTSC involves transmission at 4.5 MHz, means that Verhoeckx cannot teach transmission of high quality video. These two references together, then, teach away from transmitting signals at 70MHz or 170 MHz over UTP. Transmission at 70 MHz or 170MHz would yield high quality video, but the prior art that the Examiner cites tells the ordinarily skilled artisan that transmission of such signals over UTP is not possible.

Putting aside any issue of whether the combination is enabling, the point remains that one reference, Verhoeckx, says that you cannot transmit such signals over UTP, and Tompkins says the same thing. Therefore, the references cannot possibly teach or suggest the transmission of signals at such frequencies over UTP. To conclude otherwise would be the sheerest form of

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

hindsight. As a result, Appellant maintains that the Tompkins/Verhoeckx combination is insufficient for the purpose on which the Examiner has relied on it. Based on that insufficiency, Appellant submits that all of claims 1-5, 7-11, 21-25, and 27-31 are patentable.

Again, the remaining applied references do not supply the deficiencies of the Tompkins/Verhoeckx combination that the Examiner has posited. Accordingly, Appellant submits that the claims are patentable.

Issue 3

The Examiner also has rejected claim 12 as patentable over Verhoeckx for the same reason that the Examiner rejected claims 1 and 21. However, Appellant believes that claim 12 is patentable for many of the reasons that claims 1 and 21 are patentable, per the discussion of Issue 1 above. In particular, the "UTP" issue here is the same as in claims 1 and 21, but more than that, the "computer network" issue is similar. The Examiner has read out this limitation from claim 12, but this is improper, given how digital control signals are produced according to the embodiments described in the present application.

Looking at this point more closely, step (b) of generating digital control signals comes from LAN hub 25 in Fig. 3. Clearly there is a network context here, from which the Examiner cannot divorce claim 12 and its dependencies. Therefore, for these reasons, as related to the reasons presented in Issue 1 above, Appellant submits that claims 12-14 are patentable, none of the other applied references supplying the deficiency of Verhoeckx.

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

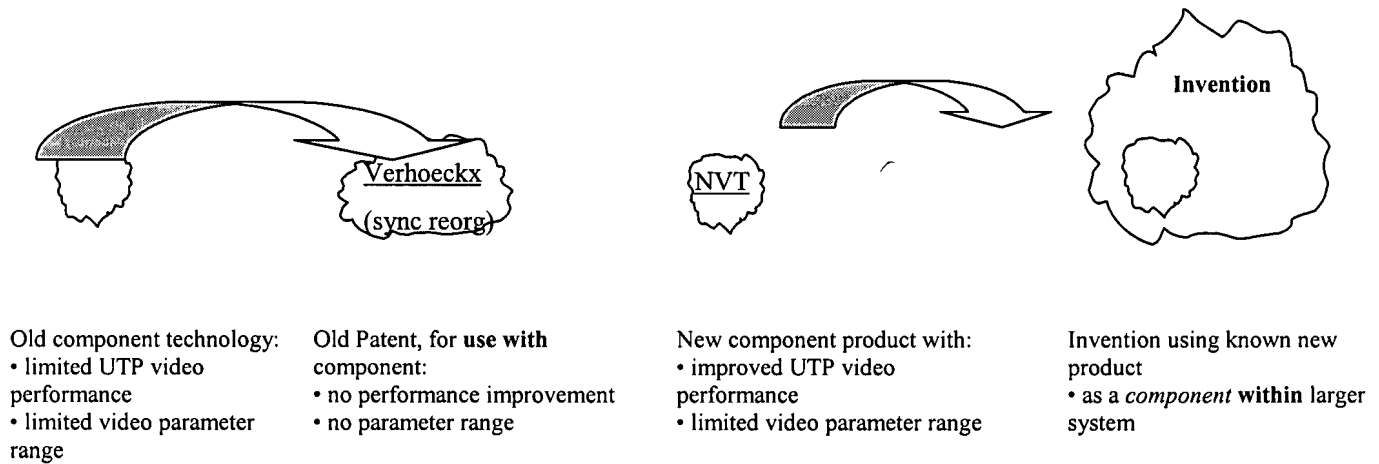
Issue 4

This issue relates to Issue 2 above, in that Tompkins fails to supply the deficiencies of Verhoeckx as regards UTP and a "computer network". Consequently, for the reasons set forth above with respect to Issue 2, Appellant submits that claims 12-14 are patentable over the Tompkins/Verhoeckx combination as well, none of the other applied references supplying the deficiency of this combination.

Issue 5

The Examiner's arguments concerning the specification's alleged lack of enablement relative to Verhoeckx are believed misplaced, per the diagram below. Verhoeckx assumes UTP video transceiver components of its day (circa 1971) and teaches how to reorganize the video signal's sync prior to transmission and reconstruct after reception in an arrangement to be used with those UTP video transceiver components. In contrast, the present invention assumes UTP video transceivers of its day (circa 1993), and discloses and claims a video communications system using a common UTP path for both analog video signals and digital control signals provided by a communications control component which is part of a network (claims 1 and 21) or produces digital control signals using a computer network component (as claim 12, read in the context of the present application, would clearly indicate). Viewed in this context, the performance and parameter range of the old Verhoeckx component are unusable in the present invention.

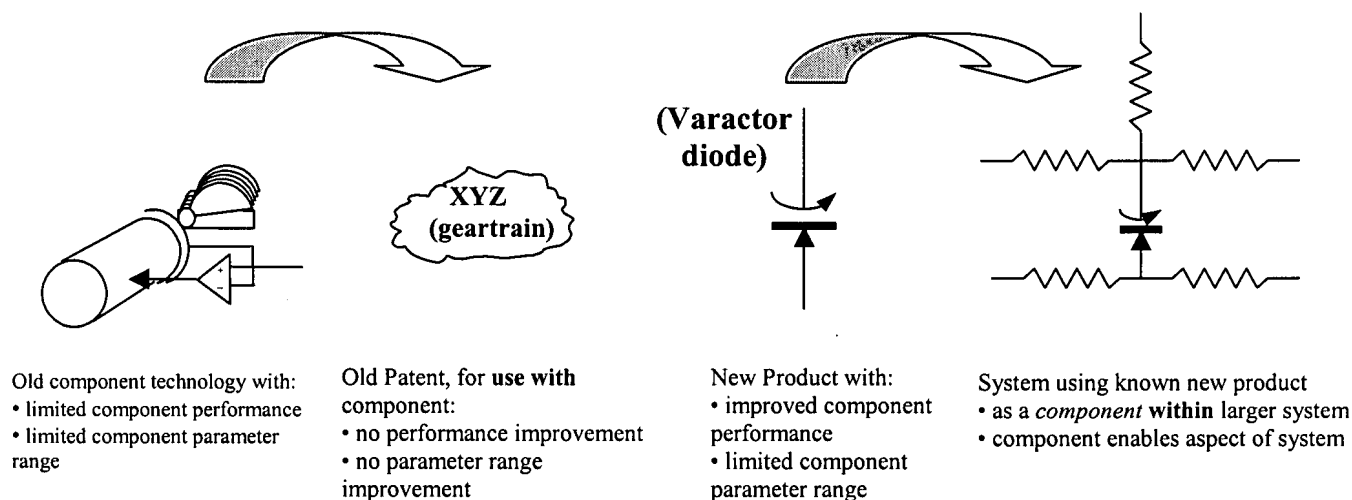
APPELLANT'S BRIEF ON APPEAL
 UNDER 37 C.F.R. § 1.192
 U.S. Appln. No. 09/072,549



The Examiner's argument regarding the "corresponding enablement" issue can be recast in the following analogous setting, which is believed to highlight the inapplicability of the argument. Beginning with old voltage-controlled capacitor technology employing a servo/motor arrangement and operating a rotation-adjustable variable capacitor, assume the existence of a XYZ grounded gear train patent to reorganize a mechanical drive-train, and positioned for use with this old voltage-controlled capacitor technology. Later, non-mechanical varactor diode components become available to control AC capacitance via applied DC voltage (via band-gap space-charge variation), and are used to create a systems invention that can use the performance and parameter ranges of the varactor but not those of the old voltage-controlled capacitor technology.

In this context, it would be inappropriate to cite the XYZ patent against the new systems invention because the old technology simply would be unusable in the new invention. Appellant submits that this situation applies equally when Verhoeckx is compared to the present invention.

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549



The analogy also pertains to the non-enablement argument which the Examiner made. The UTP video transceiver components which Verhoeckx assumes were known components at the time of that invention and thus were not taught nor cited explicitly. Similarly, the UTP video transceiver components assumed in the present application were known components at the time of the invention and thus even though they were not taught nor cited explicitly. Appellant will amplify this point in greater detail below in discussing Issue 6. In view of the foregoing, Appellant submits that the present invention is no less enabled in the invention's own environment than Verhoeckx is in Verhoeckx's much older environment.

Issue 6

Initially, as alluded to above, Appellant believes that the Examiner has focused on the UTP aspect of the invention, to the exclusion of other elements which the claims recite. Appellant may bear some responsibility for this focus, as this has been a key point of the argument that Appellant has been trying to make for patentability over the old Verhoeckx and Tompkins teachings. Having

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

taken a step back, Appellant believes that the proper computer network focus of the invention makes this enablement issue go away, as the Examiner has only raised it because Appellant has compared his disclosure with that of Verhoeckx. In any event, for the sake of completeness, since there is a § 112, first paragraph issue to address in this prosecution, Appellant will address it now.

The Examiner appears to have given no weight to the numerous statements in the present application regarding the recognition of the problem of transmitting TV-quality video over UTP, nor to Appellant's assertions in the application that the present invention solves this problem. As Appellant will detail below, there are indeed numerous places in the specification where the problem is identified, and its solution set forth. Given the absence of any reasonable teaching or suggestion in Verhoeckx et al. regarding the problem or the solution, Appellant submits that the Examiner's position is misplaced.

Moreover, Appellant submits that the present application does provide disclosure, far in excess of that provided in Verhoeckx et al., so as to enable one of ordinary skill in the art to transmit TV-quality video over UTP. In particular, as Appellant will discuss in detail below, and as discussed in the Declaration of Lester F. Ludwig, one of the named inventors of the present application, the transmission of TV-quality video over UTP is accomplished, *inter alia*, by following Appellant's teachings of a video communications system having an Audio/Video (A/V) transceiver as described, for example, in FIG. 19 of the application.

As additional evidence of the requisite detail set forth in the present application, Appellant points out some of the relevant portions of the present application, and also provides evidence that one of ordinary skill in the art actually constructed a device for the transmission of TV-quality video

signals over UTP, using no more than the teachings of the present application, and the knowledge of the ordinarily skilled artisan.

1. The Disclosure of the Present Application Far Exceeds that of Verhoeckx et al.

The Ludwig Declaration describes the portions of the present application which provide the disclosure, missing from Verhoeckx, from which the ordinarily skilled artisan could facilitate the transport of TV-quality video over UTP.

In FIG. 19 of the present application, A/V transceivers 840 are shown having ports labeled Video Out 841, Video In 842, Audio Out 843, and Audio In 844. Ludwig Decl., para. 8. FIG. 19 further shows that A/V Transceivers 840 further comprise port 845, which is ultimately connected to A/V Network (UTP) 901. Ludwig Decl., para. 8.

The present application also describes input and output of video signals through an A/V transceiver. Specifically, the application notes that video signals are passed as input into A/V Transceivers 840, and that A/V Transceivers 840 transform these video signals from standard video cable signals to UTP signals (Specification, pg. 23, para. 3). Ludwig Decl., para. 9. The A/V transceivers 840 then send the UTP video signals, via port 845, onto AV Network (UTP) 901 (Specification, pg. 23, para. 3). Ludwig Decl., para. 9.

The present application further describes how an A/V transceiver processes video input. In a fashion similar to video output, video signals are received from AV Network (UTP) 901 through port 845 of A/V Transceivers 840 (Specification, pg. 23, para. 5 to pg. 24, para. 1). Ludwig Decl., para. 10. The video signals are then passed through A/V Transceivers 840 and

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

sent out through the Video Out port 841, so that the video signals may ultimately be received by some display mechanism (Specification, pg. 24, para. 1). Ludwig Decl., para. 10.

Appellant notes further that the present application specifically describes the use of UTP wiring for video signal transmission. For example, workstations are described as communicating with LANs via commonly installed 4-pair UTP telephone wires, wherein one pair is used for incoming video with accompanying audio multiplexed in, another pair is used for outgoing multiplexed audio/video, and the remaining two pairs are used for carrying incoming and outgoing data (Specification, pg. 10, para. 3). Ludwig Decl., para. 16.

The application also describes specific examples of UTP wiring formats that the workstations may use. The present application specifically notes that a 10BaseT Ethernet uses RJ-45 pins 1,2,4, and 6, leaving pins 3, 5, 7, and 8 available for two A/V twisted pairs, and that the resulting system is compatible with standard (AT&T 258A, EIA/TIA 568, 8p8C, 10BaseT, ISDN, 6P6C, etc.) telephone wiring (Specification, pg. 10, para. 3). Ludwig Decl., para. 17.

A/V transceivers 840 also are described in the application as potentially having muxing/demuxing facilities to enable the transmission of audio/video signals on a single pair of wires (Specification, pg. 25, para. 1). Ludwig Decl., para. 18. The application even gives an example of how muxing/demuxing may take place, by noting the ability of the A/V transceiver to encode audio signals, digitally, in the vertical retrace interval of the analog video signal (Specification, pg. 25, para. 1). Ludwig Decl., para. 18.

Based at least in part on the above-identified portions of the present application, Appellant submits that the present application discloses not only the concept, but also the implementation of

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

transmission of TV-quality video signals over UTP. Ludwig Decl., paras. 14, 19. None of this disclosure may be found anywhere in Verhoeckx.

In addition to what is shown in the present application, it is well known in the art, as evidenced by U.S. Patent 4,800,344 (the '344 patent), issued January 24, 1989 to Graham, to use common mode filtering to improve line transmission quality, and hence bandwidth or capacity of a transmission line. Ludwig Decl., para. 3. Coupled with the description in the present application, the ordinarily skilled artisan would be well able to build a system which transmits TV quality video signals over UTP. Ludwig Decl., para. 19.

Clearly Verhoeckx et al. discloses none of this. Moreover, given what is disclosed in Verhoeckx et al., adding the Graham teaching to that disclosure would not provide the requisite detail for the ordinarily skilled artisan to construct a system to transmit TV quality video over UTP. Ludwig Decl., para. 2.

2. The Disclosure of the Present Application Is Sufficient to Enable a System Which Transmits TV-Quality Video Over UTP

Moreover, as Dr. Ludwig discusses in his Declaration, as of the effective filing date of the present application (October 1, 1993), one of ordinary skill in the art constructed a device to transmit TV-quality video over UTP, based on no more than the teachings of the present application, and the '344 Patent. Ludwig Decl., paras. 11-14).

Looking at this point in more detail, prior to the effective filing date of the present application (October 1, 1993), the co-inventors of the present application, Dr. Ludwig and Mr. Lauwers, had conceived a system that could transmit TV-quality video signals over UTP. One aspect of the conceived system included Dr. Ludwig's recognition that one could use a common

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

mode filter, such as the one disclosed in the '344 patent, to improve line transmission quality so as to enable the kind of bandwidth over UTP that is necessary to transmit TV-quality video signals. Ludwig Decl., para. 3. Experiments conducted between the conception date and October 1, 1993 verified the concept. *Id.*

After Dr. Ludwig's conception, Dr. Ludwig had discussions with Mr. Graham, the named inventor of the '344 patent, relating to the video transmission capabilities of the circuit disclosed in the '344 patent. Ludwig Decl., para. 4. In one of these discussions, Dr. Ludwig told Mr. Graham that the common mode filter disclosed in the '344 Patent could be used as part of a design to enable the transmission of TV-quality video signals over UTP. *Id.* After these discussions, Mr. Graham later informed Dr. Ludwig that he had licensed video applications of the '344 patent to a Mr. Dan Nitzan. *Id.*

After Mr. Graham told Dr. Ludwig about the license agreement that he had with Mr. Nitzan, but before October 1, 1993, Dr. Ludwig held discussions with Mr. Nitzan. Ludwig Decl., para. 5. At the time of these discussions, Mr. Nitzan had started Network Video Technologies, Inc. (NVT). *Id.* During these discussions, Dr. Ludwig told Mr. Nitzan that the teachings of the '344 patent could be used as part of a design to enable the transmission of TV quality video signals on UTP. Ludwig Decl., para. 6.

The substance of Dr. Ludwig's discussions with Mr. Nitzan that relate to the present invention amounted to no more than what is disclosed in the present application and the disclosure of the '344 Graham patent. Ludwig Decl., para. 7. Furthermore, the relevant substance of what Mr. Graham disclosed to Mr. Nitzan regarding the video transport capabilities of the circuit described in

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

the '344 patent amounted to no more than what Dr. Ludwig disclosed to Mr. Graham. Ludwig Decl., para. 7.

Some of the relevant aspects of the present application that Dr. Ludwig related to Mr. Nitzan are illustrated in FIG. 19 and discussed in the accompanying specification (as noted above). It should be noted that Dr. Ludwig did not disclose to Mr. Nitzan the details relating to muxing/demuxing (Specification, pg. 25, para 1), nor the details relating to UTP wiring formats utilized by workstations of the present application (Specification, pg. 25, para. 1). Ludwig Decl., para. 15. So, Mr. Nitzan actually had less than all of the teachings of the present application to work with.

After Dr. Ludwig had his discussions with Mr. Nitzan, and of course after the inventors' conception, but prior to the effective filing date of the present application (October 1, 1993), NVT produced an A/V transceiver, the NVT Model 518A Video Transceiver. Ludwig Decl., para. 11. The transceiver, which was billed (per the advertisement attached to Dr. Ludwig's Declaration) as transmitting TV-quality video over UTP, was made available to the public prior to the effective filing date of the present application. *Id.*

According to Dr. Ludwig, at the time of developing the NVT 518A, Mr. Nitzan was one of ordinary skill in the art, who was able to use his knowledge, combined with what Dr. Ludwig disclosed to him (as noted above, involving the Graham disclosure which was part of the knowledge of the art, but involving less than all of the teachings of the present application), to construct the NVT 518A. Ludwig Decl., para. 14.

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

Pursuant to the foregoing, Appellant believes it is clear that the present application, well beyond what Verhoeckx et al. discloses, teaches not only the concept, but also the implementation of transmission of TV-quality video signals over UTP.

A more detailed look at the NVT 518A specification sheet reveals that this video transceiver is a device that allows transmission of full motion color video over standard telephone wire, and can be used in applications, including video conferencing and multi-media. The NVT 518A specification sheet further describes connector interfaces for audio/video along with a wiring configuration for a network interface.

While some of the circuitry details of the A/V Transceivers 840 are not detailed in the present application, Appellant respectfully points out that such details were not necessary because an appropriate A/V transceiver (e.g., NVT 518A) was well known in the video conferencing art as of the effective filing date of the present application (described above). “[T]he specification need not disclose what is well-known to those skilled in the art and preferably omits that which is well-known to those skilled and already available to the public.” See M.P.E.P. § 2164.05(a) (*citing In re Buchner*, 929 F.2d 660, 661, 18 U.S.P.Q.2d 1331, 1332 (Fed. Cir. 1991)) (emphasis added). In accordance with the M.P.E.P., the present application need not include details of A/V transceiver design since an appropriate A/V transceiver (e.g., NVT 518A) was well-known and available to the public as of the filing date of the present application.

3. The NVT 518A is Not Prior Art to The Present Application

While the NVT 518A was made available to the public prior to the effective filing date of the present application, it is not prior art to the present application since, as Dr. Ludwig states, the NVT 518A is constructed from a design conceived by Dr. Ludwig. Ludwig Decl., paras. 3, 5, 11, 14. Accordingly, an A/V transceiver that was capable of providing TV-quality video over UTP (e.g., NVT 518A) was well-known in the videoconferencing art at least as early as the effective filing date of the present application (October 1, 1993), but is not prior art as to this application.

Accordingly, Appellant submits that not only does the present application teach the concept and implementation of transmitting TV-quality video signals over UTP, but the specification enables one of ordinary skill to utilize a publicly available A/V transceiver (e.g., NVT 518A) to make and use Appellant's claimed video communication system, or practice Appellant's claimed method. Based on the foregoing, the present application clearly enables one of ordinary skill to construct a teleconferencing system that provides TV-quality video signal transmission over UTP.

IX. CONCLUSION

Pursuant to the foregoing, Appellant submits that claims 1-5, 7-15, 17-25, and 27-31 are patentable. Accordingly, Appellant respectfully requests that the Examiner's rejection be reversed, and the application passed to allowance at the earliest opportunity.

The present Brief on Appeal is being filed in triplicate. Unless a check is submitted herewith for the fee required under 37 C.F.R. §1.192(a) and 1.17(c), please charge said fee to Deposit Account No. 19-4880.

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

Appellant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,



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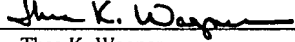
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APPENDIX

CLAIMS 1-5, 7-15, 17-25, 27-31 ON APPEAL:

1. A video communication system comprising:
 - (a) at least one analog video-signal source;
 - (b) a plurality of video display devices;
 - (c) at least one communication control component configured
 - (i) to produce digital control-signals; and
 - (d) a computer network including
 - (i) an unshielded twisted pair of wires
 - (1) defining a UTP communication path,
 - (2) arranged for video-signal transportation,wherein the system is configured to
 - (i) multiplex
 - (1) analog video-signals,
 - a. originating at one of the video-signal sources,
 - (2) with digital control-signals;
 - a. from one of the communication control components
 - (ii) transmit
 - (1) the multiplexed signals
 - (2) along the UTP communication path,
 - (3) to at least one of the video display devices, and
 - (iii) use
 - (1) the control-signals
 - (2) to control reproduction of color video images,
 - a. at TV quality,
 - b. based on the video-signals,
 - c. on at least one of the video display devices.

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

2. The video communication system of claim 1, further comprising
 - (a) at least one analog audio-signal source; and
 - (b) at least one audio reproduction device,wherein the system is configured to
 - (i) multiplex
 - (1) the analog video-signals
 - (2) with the digital control-signals, and
 - (3) with analog audio-signals
 - a. originating at one of the audio-signal sources;
 - (ii) transmit
 - (1) these multiplexed signals
 - (2) along the UTP communication path; and
 - (iii) reproduce audio
 - (1) based on the audio-signals
 - (2) at one of the audio reproduction devices.
3. The system of claim 2, further comprising:
 - (a) at least one switch
 - (i) in communication with the UTP communication path,wherein the system is configured to
 - (i) control the switch
 - (ii) to route
 - (1) the multiplexed signals
 - (2) along the UTP communication path.
4. The system of claim 3, wherein the computer network further includes:
 - (a) at least one server

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appl. No. 09/072,549

- (i) configured to
 - (1) control the switch.
- 5. The system of claim 2, wherein
 - (a) each of video display device
 - (i) has an associated processor
 - (ii) to define a workstation, andwherein the system is configured to
 - (i) control the reproduction of video images and spoken audio
 - (1) of a first workstation user
 - (2) at the workstation of a second workstation user.
- 7. The system of claim 5, wherein the system is configured
 - (a) to combine video images
 - (i) of at least a first and a second user
 - (ii) into a mosaic image, and
 - (b) to reproduce the mosaic image
 - (i) on one of the video display devices.
- 8. The system of claim 5, wherein the system is configured:
 - (a) to allow a first user
 - (i) to use a first graphical user interface
 - (ii) to select a user
 - (iii) from a plurality of users; and
 - (b) to allow the first user
 - (i) to use a second graphical user interface
 - (ii) to select a collaboration type
 - (iii) from a group of collaboration types; and

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

- (c) to respond
 - (i) by establishing communication
 - (ii) of the selected collaboration type
 - (iii) between the first user and
 - (iv) the selected user.

- 9. The system of claim 2, comprising:
 - (a) at least one processor
 - (i) capable of providing data conferencing signals;wherein the system is configured to
 - (ii) display information,
 - (1) based on the data conferencing signals,
 - (2) on one of the display devices.

- 10. The system of claim 9, wherein
 - (a) images
 - (i) based on the video signals
 - (ii) can be displayed
 - (iii) in a first window on the display device, and
 - (b) information
 - (i) based on the data conferencing signals
 - (ii) can be displayed
 - (iii) in a second window on the display device.

- 11. The system of claim 9, wherein
 - (a) the information
 - (i) based on the data conferencing signals
 - (ii) is displayed

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

- (iii) interactively
- (iv) on at least two of the display devices.

12. A method of conducting a teleconference using a system including
a plurality of video display devices, and
at least one video signal source
the method comprising the steps of:
- (a) generating analog video-signals,
 - (i) at one of the video-signal sources;
 - (b) producing digital control-signals;
 - (c) multiplexing
 - (i) the analog video-signals
 - (ii) with the control-signals
 - (iii) onto a computer network;
 - (1) including at least one unshielded twisted pair of wires;
 - (i) defining a UTP communication path; and
 - (ii) arranged for video-signal transportation
 - (d) transmitting the multiplexed signals
 - (i) along the UTP communication path; and
 - (e) using the control-signals to
 - (i) control the reproduction of color video images,
 - (1) at TV quality,
 - (2) based on the transmitted video-signals,
 - (3) on one of the video display devices.
13. The method of claim 12, wherein the system includes
at least one audio source and

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

- at least one audio reproduction device,
the method further comprising the steps of:
 - (a) transporting audio signals,
 - (i) originating at one of the audio sources;
 - (ii) over the UTP communication path; and
 - (b) reproducing audio
 - (i) based on the transported audio signals
 - (ii) at one of the audio reproduction devices.
- 14. The method of claim 13, further comprising the step of:
 - (a) switching the signals
 - (i) over the UTP communication path.
- 15. The method of claim 13, wherein
 - (a) each video display device
 - (i) has an associated processor
 - (ii) to define a workstation,the method further comprising the step of
 - (iii) displaying images at a workstation.
- 17. The method of claim 15, further comprising the steps of
 - (a) combining video images
 - (i) of at least a first and a second user
 - (ii) into a mosaic image, and
 - (b) reproducing the mosaic image
 - (i) on at least one of the video display devices.
- 18. The method of claim 15, further comprising the steps of

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

- (a) allowing a first user
 - (i) to use a first graphical user interface
 - (ii) to select a user
 - (iii) from a plurality of users;
 - (b) allowing the first user
 - (i) to use a second graphical user interface
 - (ii) to select a collaboration type
 - (iii) from a group of collaboration types; and
 - (c) responding
 - (i) by establishing communication
 - (ii) of the selected collaboration type
 - (iii) from the first user to
 - (iv) the selected user.
19. The method of claim 15, further comprising the steps of
- (a) generating data conferencing signals;
 - (b) transmitting the data conferencing signals
 - (i) over at least one data communication path
 - (c) displaying information,
 - (i) based on the transmitted data conferencing signals,
 - (ii) on at least one of the video display devices.
20. The method of claim 19, further comprising the steps of:
- (a) reproducing images
 - (i) based on the video signals
 - (ii) in a first window on the display device, and
 - (b) displaying information
 - (i) based on the data conference signals

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

- (ii) in a second window on the display device.

21. A video communication system

for operation with an infrastructure including

- at least one analog video-signal source;
- a plurality of video display devices; and
- a computer network

- including an unshielded twisted pair of wires
defining a UTP communication path
arranged for video signal transportation,

the system comprising:

- (a) at least one communication control component configured to,
produce digital control-signals; and

wherein the system is configured to

- (i) multiplex
 - (1) analog video-signals,
 - a. originating at a video-signal source,
 - (2) with digital control-signals
 - a. from one of the control communication components,
- (ii) transmit the multiplexed signals
 - (1) along the UTP communication path;
 - (2) to at least one of the video display devices; and
- (iii) use the control-signals to
 - (1) control reproduction of video images,
 - a. at TV quality,
 - b. based on the video-signals,
 - c. at one of the video display devices.

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

22. The video communication system of claim 21, wherein the infrastructure further includes
at least one analog audio-signal source; and
at least one audio reproduction device, and
wherein the system is configured to
- (i) multiplex
 - (1) the analog video-signals
 - (2) with the digital control signals, and
 - (3) with analog audio-signals
 - a. originating at one of the audio-signal sources;
 - (ii) transmit
 - (1) these multiplexed signals
 - (2) along the UTP communication path; and
 - (iii) reproduce audio
 - (1) based on the audio-signals
 - (2) at one of the audio reproduction devices.
23. The system of claim 22, wherein
- (a) the control components are further configured to control
 - (i) a switch
 - (ii) to route the multiplexed signals
 - (1) along the UTP communication path.
24. The system of claim 23, wherein the system further comprises:
- (a) at least one server
 - (i) configured to
 - (1) control the switch.
25. The system of claim 22, wherein

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

- (a) each video display device
 - (i) has an associated processor
 - (ii) to each define a workstation, andwherein the system is configured
 - (i) to control the reproduction of video images and spoken audio
 - (1) of a first workstation user
 - (2) at the workstation of a second workstation user.
- 27. The system of claim 25, wherein the system is configured
 - (a) to combine video images
 - (i) of at least a first and a second user
 - (ii) into a mosaic image, and
 - (b) to reproduce the mosaic image
 - (i) on at least one of the video display devices.
- 28. The system of claim 25, wherein the system is configured:
 - (a) to allow a first user
 - (i) to use a first graphical user interface
 - (ii) to select a user
 - (iii) from a plurality of users; and
 - (b) to allow the first user
 - (i) to use a second graphical user interface
 - (ii) to select a collaboration type
 - (iii) from a group of collaboration types; and
 - (c) to respond
 - (i) by establishing communication
 - (ii) of the selected collaboration type
 - (iii) between the first user and

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

(iv) the selected user.

29. The system of claim 24, wherein the system is configured:

- (a) to transport data conferencing signals
 - (1) originating at a processor,
 - (2) to at least one of the display devices,
- (b) display video images,
 - (1) based on the carried video signals,
 - (2) on the display device, and
- (c) display information,
 - (1) based on the carried data conferencing signals,
 - (2) on the display device.

30. The system of claim 29, wherein:

- (a) images
 - (i) based on the video signals
 - (ii) can be displayed
 - (iii) in a first window on the display device, and
- (b) information
 - (i) based on the data conference signals
 - (ii) can be displayed
 - (iii) in a second window on the display device.

31. The system of claim 29, wherein

- (a) the information
 - (i) based on the data conferencing signals
 - (ii) is displayed
 - (iii) interactively

APPELLANT'S BRIEF ON APPEAL
UNDER 37 C.F.R. § 1.192
U.S. Appln. No. 09/072,549

(iv) on at least two of the display devices.